

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicants:	Gregory W. Cox et al.)	
Filed:	November 28, 2001)	
For:	Method and Apparatus for Self-Link Assessing Router)	This 1 ST Substitute Appeal Brief
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Docket No.:	CML00090N (69611))	
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1st SUBSTITUTE APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Pursuant to 37 C.F.R. §1.192, the applicants hereby respectfully submit the following
1st Substitute Appeal Brief in support of their appeal.

(1) Real Party in Interest

The real party in interest is Motorola, Inc., a Delaware corporation having a primary
place of business in Schaumburg, Illinois.

(2) Related Appeals and Interferences

There are no related appeals or interferences known to appellant, the appellant's legal
representative, or assignee that will directly affect, or be directly affected by or have a
bearing on the Board's decision in the pending appeal.

(3) Status of Claims

Claims 1-18 are pending and presently stand twice and finally rejected and constitute the subject matter of this appeal.

(4) Status of Amendments

No post-final amendments have been submitted.

(5) Summary of Claimed Subject Matter

A concise explanation of this subject matter appears as follows in the form of claim subject matter maps (with corresponding references to the specification¹ by page and line number (in brackets) and to the drawings by figure number and reference characters (the latter in parenthesis)) followed by a brief prose-based explanation.

Independent claim 1

A method comprising: at a router having at least two interfaces and that connects multiple communication links to one another:	FIG. 1 (104), [Page 1, lines 19 - page 2, line 1; page 3, line 14 - page 4, line 4]
identifying at least one active communication link to provide an identified active communication link;	FIG. 2 (201), [page 4, lines 16 - 31]
automatically identifying whether the router needs a new address prefix for the identified active communication link.	FIG. 2 (204), FIG. 3, [page 2, line 27 – page 3, line 13; page 4, line 32 – page 5, line 15; page 5, line 24 – page 6, line 27]

Independent claim 8

A method to automatically support automatic configuration of a network router having at least two interfaces	FIG. 1 (104), FIG. 2
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¹ As originally filed and not as published.

and that connects multiple communication links to one another comprising:	(206), [Page 1, lines 19 - page 2, line 1], [page 2, line 27 - page 3, line 13], [page 3, line 14 - page 4, line 4], [page 4, line 32 - page 5, line 15], [page 6, lines 19-27]
at the network router: automatically assessing each router link to identify active communication links to provide identified active communication links;	FIG. 2 (201), [page 4, lines 16 - 31]
for each identified active communication link: automatically identifying whether the router needs to support the identified active communication link;	FIG. 2 (204), [page 2, line 27 - page 3, line 13], [page 4, line 32 - page 5, line 15]

for each identified active communication link that is identified as needing support, automatically identifying whether that identified active communication link requires at least one network address prefix.	FIG. 2 (204), FIG. 3, [page 2, line 27 - page 3, line 13], [page 4, line 32 - page 5, line 15], [page 5, line 24 - page 6, line 27]
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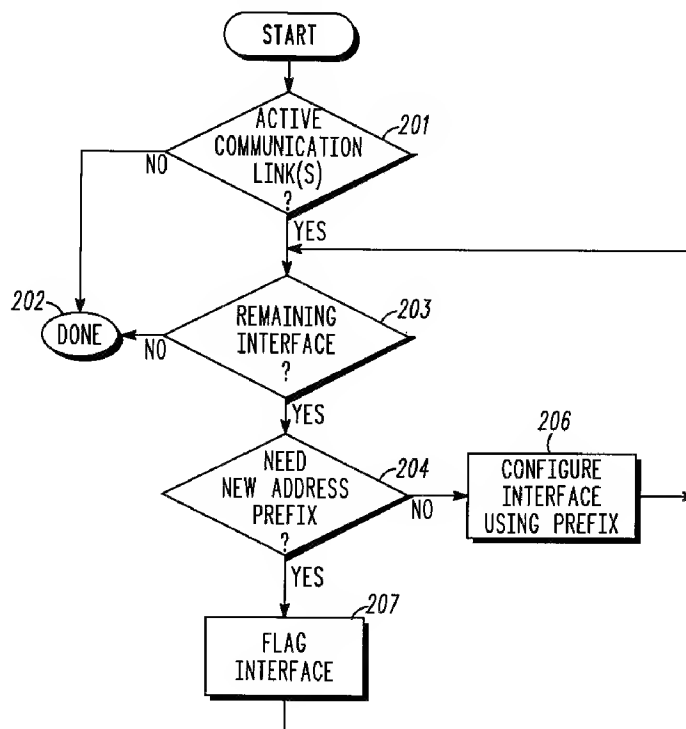
Independent claim 11

A router comprising: at least two interfaces such that the router connects multiple communication links to one another;	FIG. 1 (104), [Page 1, lines 19 - page 2, line 1], [page 3, line 14 - page 4, line 4]
first means for automatically identifying at least one active communication link to provide an identified active communication link; and	FIG. 1 (104), FIG. 2 (201), [page 2, line 27 -

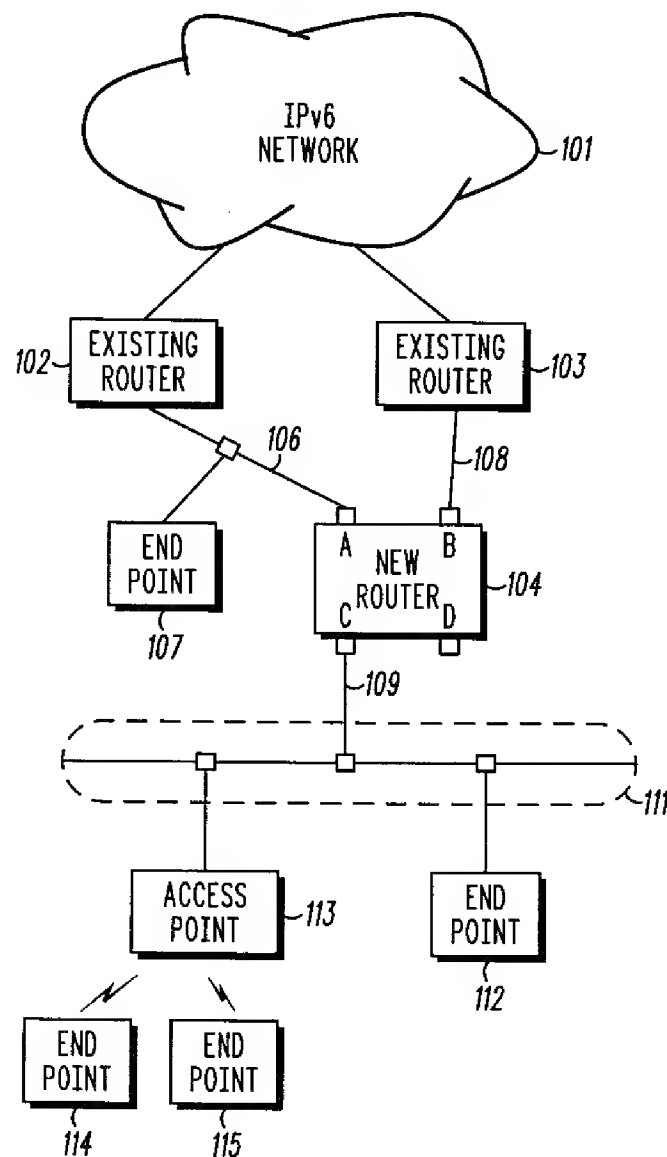
	page 3, line 13], [page 4, lines 16 - 31]
second means for automatically identifying when the router needs to provide a new address prefix for the identified active communication link.	FIG. 1 (104), FIG. 2 (204), FIG. 3, [page 2, line 27 – page 3, line 13], [page 4, line 32 – page 5, line 15], [page 5, line 24 – page 6, line 27]

Internet Protocol version 6 (Ipv6) comprises a protocol intended, in part, to better accommodate wireless endpoints [page 1, lines 19 – 21]. Though this protocol family provides for endpoints that are anticipated to be self-configuring [page 2, lines 2 – 3], routers are excluded from assistance in this regard [page 2, lines 3 – 11]. The present invention addresses this shortcoming.

FIG. 2 is presented below for the convenience of the reader.



A router (104) can monitor (201) its interfaces (such as interfaces A through D in FIG. 1 reproduced below for the convenience of the reader) to identify active communication links [page 4, lines 17 – 23].²



² This supports the “first means for automatically identifying at least one active communication link to provide an identified active communication link” as appears in claim 11 and also the means for “automatically identifying a plurality of active communication links to provide a plurality of identified active communication links” as appears in claim 12.

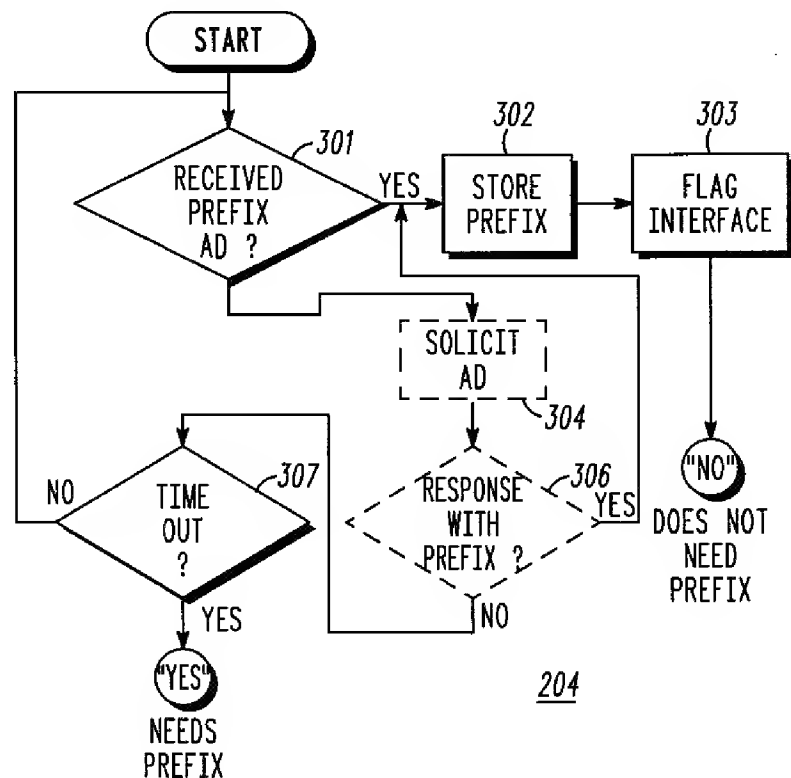
When no interface is connected to an active communication link, this automated process concludes (202). Upon detecting (201) active communication links, however, this automated process then determines (203) whether any interfaces remain that have not yet been assessed. When all active interfaces have been assessed, the process, again, can conclude (202).

When an unassessed interface exists, the process ascertains (204) whether a particular interface (and hence the active communication link to which that interface connects) needs a new address prefix (a new address prefix comprising, for example, an address prefix that has not already been allocated for use by this communication link and/or by this router).³ As provided by the specification, a “new address prefix” constitutes “an address prefix that has not already been allocated for use by this communication link and/or by this router 104. If the router 104 already has an address prefix that can be utilized to support the communication link that couples to the interface being processed, then a new address prefix is not required and the router 104 can automatically configure 206 an IPv6 address for the interface based on a pre-existing and available address prefix, and then optionally begin advertising this prefix on the link” [page 5, lines 2 – 9].⁴ When this router already has an address prefix that can be utilized to support the communication link that couples to the interface being processed, then a new address prefix is not required and the router can automatically configure (206) an IPv6 address for the interface based on a pre-existing and available address prefix, and then optionally begin advertising this prefix on the link. When the process determines (204), however, that a new address prefix is required for the interface, the process flags (207) that interface (for example, by making an appropriate entry into resident memory of the router) or takes other appropriate action to denote for later recollection and action that this particular interface needs a new address prefix [page 4, line 32 – page 5, line 15].

³ This supporting the “second means for automatically identifying when the router needs to provide a new address prefix for the identified active communication link” as appears in claim 11 and also the means “for automatically identifying when the route needs to provide a new address prefix for each of the plurality of identified active communication links” as appears in claim 13.

⁴ This also supporting the “second means for automatically identifying when the router needs to provide a new address prefix for the identified active communication link” as appears in claim 11 and also the means “for automatically identifying when the route needs to provide a new address prefix for each of the plurality of identified active communication links” as appears in claim 13.

FIG. 3 is now presented for the convenience of the reader.



To determine whether a new address prefix is needed, a router can monitor data traffic on the active communication link for the interface being studied [page 5, lines 24 – 27]. In particular, the router can look (301) for a received address prefix advertisement (prior art routers often advertise their address prefixes on their supported links to facilitate stateless autoconfiguration by endpoints). Upon receiving an address prefix advertisement, the prefix can be stored (302) and the corresponding interface flagged (303) accordingly. Such actions are one approach to render the configuration step (206) described earlier [page 5, line 27 – page 6, line 4].

When an address prefix advertisement from another router cannot be detected (301), the router can transmit a solicitation for such an advertisement to the link that couples to the interface being processed.⁵ Such messages are permitted by endpoints and should elicit a

⁵ This supporting the means “for automatically determining when the router needs to advertise a new address prefix for use by link endpoints” as appears in claim 14 as well as the means “for automatically determining when the router needs to advertise a new address prefix for use by at least one link endpoint by soliciting at least one other router to advertise” as appears in claim 15.

corresponding network address prefix advertisement from any other configured router on that link. Upon detecting (306) such a response, the address prefix portion of that response can be stored (302) and later utilized to autoconfigure (206) that particular interface as noted earlier. When no such response is detected (306) (or when dispensing with this activity) the router can determine (307) whether sufficient time has been expended on this particular interface. If not, the process can repeat. Otherwise, the process continues as related above with respect to FIG. 2 by flagging the interface as requiring a new address prefix [page 6, line 5 – 18].⁶

So configured, a router can automatically self-assess its communication link interfaces and the results can be used to self-configure interfaces with address prefixes where appropriate and available and to otherwise identify interfaces that require a new address prefix. The latter information can be utilized to facilitate subsequent actions to obtain the needed new address prefix. The automated nature of this self assessment mechanism can significantly relieve many of the logistic difficulties of bringing a new router online, particularly when interfacing IPv6 links with existing IPv6 networks [page 6, lines 19 – 27].

(6) Grounds of Rejection to be Reviewed on Appeal

Claims 1 – 16 stand rejected under 35 U.S.C. 103(a) given U.S. Patent No. 6,532,217 to Alkhatib et al. (“Alkhatib”) in view of U.S. Patent No. 6,178,455 to Schutte et al. (“Schutte”). Claims 17 and 18 are rejected under 35 U.S.C 103(a) given Alkhatib in view of Schutte and further in view of certain prior art as has been identified and admitted by the application (“applicant’s prior art”). The applicant disputes these rejections.

⁶ The preceding two paragraphs additionally comprise a part of the “second means for automatically identifying when the router needs to provide a new address prefix for the identified active communication link” as appears in claim 11.

(7) Argument

Rejections under 35 U.S.C. 112

There are no rejections of the claims under 35 U.S.C. 112.

Rejections under 35 U.S.C. 102(b)

There are no rejections of the claims under 35 U.S.C. 102.

Rejections under 35 U.S.C. 103(a)

Claims 1 – 16 stand rejected under 35 U.S.C. 103(a) given U.S. Patent No. 6,532,217 to Alkhatib et al. (“Alkhatib”) in view of U.S. Patent No. 6,178,455 to Schutte et al. (“Schutte”). Claims 17 and 18 are rejected under 35 U.S.C 103(a) given Alkhatib in view of Schutte and further in view of certain prior art as has been identified and admitted by the application (“applicant’s prior art”).⁷

As all of these rejections rely upon Alkhatib as a primary teaching, the applicant believes it would be useful and helpful to first briefly characterize and describe the Alkhatib reference. Alkhatib teaches an approach whereby a new node on a network, other than a

⁷ There is one other potential rejection that the Examiner has seemingly suggested without actually appearing to make a corresponding official rejection of the claims. In paragraph 1 on page 2 of the most recent Office Action, the Examiner states, “[Claims 16 – 18] may alternatively be clearly rejected in view of the prior art of RFC 2462.” The Examiner offers nothing, however, beyond this brief, incomplete, and conclusory statement. For example, the Examiner has not indicated whether such a rejection would comprise a rejection under 25 U.S.C. 102 or 103, and if the latter, what other references might be combined therewith to comprise the whole of such a rejection. Claims 16 – 18 are dependent claims that depend, ultimately, upon one of independent claims 1 or 8. The applicant has reviewed the bulky and detailed contents of RFC 2462 and finds no specific content that comprises the obvious subject matter of the Examiner’s speculation in this regard. Therefore, as the Examiner has not made a prima facie showing with respect to the use or application of this reference and as the applicant cannot otherwise find an obvious point of consideration, the applicant offers no further comment in this Appeal Brief with respect to this vague, unsupported, and legally insufficient commentary by the Examiner.

router⁸, can determine a network address for itself.⁹ Alkhatib's approach is well set forth in FIG. 3A (reproduced below).

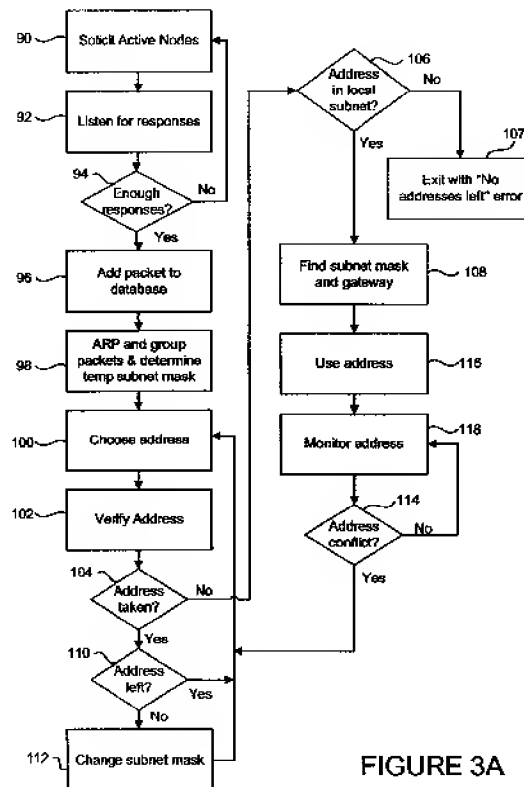


FIGURE 3A

Upon first being connected to a subnet, Alkhatib teaches that the new node solicit (90) other active nodes on the subnet by sending a “message to all of the devices asking the devices to send their IP addresses” to the new node.¹⁰ The new node considers the response to this inquiry and in particular determines (98) a temporary subnet mask that corresponds to an already existing address prefix by essentially identifying the “leading (or most significant)

⁸ Alkhatib's technique of gathering IP traffic, deducing a subnet mask, and then guessing an address could perhaps potentially be applied to a router interface, provided that the subnet *already has* a routable prefix. Otherwise, this technique would not appear to work. Alkhatib's technique could work for a second router that connects to a link, for example, when the prefix configuration is already available from a first router that also connects to that link.

This is essentially deducing what a link's pre-existing prefix (that is, a prefix already being used by nodes on the link) is.

⁹ Although Alkhatib teaches use of this approach with nodes other than a router, Alkhatib does suggest that his nodes can interface with the network via a router. [Column 5, lines 25-27.]

¹⁰ Column 5, lines 53-55.

bits that are in common among all the addresses” received from the responding nodes.¹¹ The new node then chooses (100) what is hopefully a unique address by essentially using the subnet number and network number as was gleaned from the previous step and using a combination of least significant bits that was not apparently being used by any of the responding nodes.¹²

The new node then attempts to verify (102) this new address comprised of the determined existing subnet mask and a hopefully unique set of least significant bits. Alkhatib teaches verifying the new address by transmitting an ARP request using the new address. If the new node receives a response to this ARP request, then the new node can conclude that the new address is, in fact, already in use by another node.¹³

Should this occur, the new node repeats the foregoing steps by altering the available least significant bits of the address and retrying the verification step. If the new node should run out of least significant bit permutation candidates, then the new node can change (112) the subnet mask as was earlier determined by treating a least significant bit of the previously determined subnet mask as, in fact, not being a part of the subnet mask but rather as a part of the least significant bits that are available for use as a node local address.¹⁴

Eventually, the new node either finds a new address that appears to actually be unique, in which case the new node adopts that new address for its own use (116), or the new node concludes that no new addresses are available and produces a “no addresses left” error (107).

Alkhatib is therefore seen to teach a mechanism for a non-router node, upon first being connected to a network, to glean the present subnet mask portion of locally used addresses and to then attempt to select an available combination of least significant bits that, when used in conjunction with that gleaned subnet mask, can comprise a network identifier that is can use. Alkhatib’s teachings are therefore seen to *presume the existence and availability of an existing subnet mask and hence a prefix portion of an address that is already usable on the active communication link at issue.*

11 Column 7, lines 37-54.

12 Column 7, line 65 – column 8, line 18.

13 Column 8, line 18 – column 9, line 38.

14 Column 9, line 39 – column 10, line 13.

To put it another way, should the network link to which Alkhatib's new node is attached be unable to find a subnet mask that it can apply, Alkhatib is utterly silent with respect to what, then, the new node might do. More particularly, Alkhatib's new node has no disclosed or suggested ability with respect to being able to specifically identify whether a given active communication link, and more particularly a router on that active communication link, needs a new address prefix. *Alkhatib only teaches a process that can be applied when an address prefix is, in fact, already available.*

As to independent claim 1, the Examiner argues as follows:

Alkhatib teaches a method comprising a router: identifying active communication links to provide identified active communication links (e.g., see col. 5, lines 15-49 and FIG. 2 regarding devices 72, 74 and 76 and communication links to subnet 70); and automatically identifying whether the router needs a new address prefix for the identified active communication link (e.g., see col. 3, lines 27-41 wherein finding a conflict identifies a new address prefix is required).¹⁵

As an initial point of concern, the applicant vigorously disputes the Examiner's characterization of Alkhatib's teachings as encompassing effecting such steps at "a router" for the purpose of "identifying whether the router" needs to take such action. At most, Alkhatib teaches having a non-router node that connects to a network via a router take certain actions on its own behalf and not on behalf of or with respect to the router to establish for itself a new address.

The applicant has noted this error to the Examiner in prior responses. The Examiner has responded most recently as follows:

[A]pplicant argues [citation omitted] that Alkhatib does not teach a router as claimed by applicant in claim 1. However, as discussed in the previous office action, and repeated herein, Alkhatib is *not* relied upon for this particular teaching. Rather, Schutte is relied upon for this teaching.¹⁶

¹⁵ Office Action dated June 23, 2005 at section 4 beginning on page 6.

¹⁶ Office Action dated June 23, 2005, page 3, emphasis appearing in the original.

With all due respect, this retort, while no doubt earnestly intended and offered, speaks utterly contrary to the earlier quoted statement presented above with respect to the Examiner's position vis a viz whether Alkhatib is being presented as teaching the user of a router or not. Therefore, for purposes of completeness, the applicant has repeated here its position that Alkhatib does not teach a method for use with a router as the applicant is presently unable to ascertain where the Examiner actually stands on this point.

As noted by the Examiner, the Schutte reference provides teachings that are applicable for use with routers. The Examiner argues as follows with respect to Schutte:

The teachings of Schutte provides increased efficiency for address assignment in a network (e.g., see col. 3, line 28 – col. 4, line 11). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the routing teachings of Schutte *to the routing method of Alkahtib* in order to provide increased efficiency for address assignment in a network (e.g., see col. 3, line 28 – col. 4, line 11).¹⁷

Notwithstanding the Examiner's protestations that Alkhatib is "*not* relied upon for this particular teaching [regarding use of a router]," the Examiner is now again seen to urge that Alkahtib does indeed teach a "routing method."

The applicant has two primary responses to offer to the Examiner's position. First, and to repeat, Alkhatib does not make any teachings regarding relevant use of a router or any corresponding routing method. Hence, the underlying basis for the Examiner's suggestion regarding the obviousness of combining Alkhatib with Schutte is imaginary and utterly without support. Absent that underlying basis, the person of average skill in the art would certainly have little motivation to make the suggested combination.

And second, even if one were to freely combine Alkhatib with Schutte (with or without regard to how obvious such a combination would be), one simply would be unable to meet the recitations of applicant's claim 1. In particular, neither Alkhatib nor Schutte teach or suggest that a router should be able to automatically identify whether that router needs a *new* address prefix for a particular active communication link. Alkhatib *presumes* the existence of an address prefix and instead provides teachings that deal with portions of a network address *other* than the prefix while Schutte brings nothing more relevant to the mix. As a result, even

with utter freedom to pick and choose from amongst the various teachings of these two references one is unable to derive a router that will behave as described.

Claim 1 specifically requires “automatically identifying whether the router needs a new address prefix for the identified active communication link.” This language clearly captures the points of distinction identified above. Though brief, this recitation requires “automatic” action on the part of a router, and requires in particular that the router identify whether the router “needs” a new address “prefix.” Identifying whether one “needs” something is utterly distinct from, for example, simply noting the absence of something as is well supported by the present application.

The applicant therefore respectfully submits that, for all these reasons, claim 1 is not rendered obvious in view of Alkhatib as combined with Schutte and may be passed to allowance.

Independent claim 8 is similar to claim 1, discussed above, while additional content regarding automatically identifying whether the router needs to support the identified communication links. For each so identified communication link, claim 8 then provides for automatically identifying whether such links require at least one network address prefix.

The Examiner argues as follows:

Further, regarding claim 8, Alkhatib teaches automatically identifying whether the router needs to support the identified active communication link (e.g., see col. 4, lines 35-53 wherein the routing table determines whether the router is to support the link, or if packets should be forwarded to another router.

The passage relied upon by the Examiner reads as follows:

To see how subnets work, it is necessary to explain how IP packets are processed in a router. Each router has a table listing some number of (network, 0) IP addresses and some number of (this network, host) IP addresses. The type of address (network, 0) tells how to get to distant networks. The second type of address (this network, host) tells how to get to local hosts. Associated with each table entry is the network interface to use to reach the destination.

17 Office Action dated June 23, 2005, page 7, emphasis provided.

When an IP packet arrives, its destination address is looked up in the routing table. If the packet is for a distant network, it is forwarded to the next router using the network interface given in the table. If it is a local host (e.g., on the router's LAN), it is sent directly to the destination. If the network is not present, the packet is forwarded to a default router with more extensive tables. This process means that each router need only keep track of other networks and local hosts, not (network, host) pairs, greatly reducing the size of the routing table.

To be fair, this passage does relate to "routers," if not to the non-router nodes that Alkhatib presents with respect to describing his primary teachings. The text relied upon by the Examiner appears to serve the purpose of providing the reader with information regarding prior art router operations as a background for understanding IP addressing and how Alkhatib later proposes to manipulate such IP addresses as has been described above.

That said, however, there is nothing in this quote passage (or elsewhere in Alkhatib) to support the notion that Alkhatib "teaches automatically identifying whether the router needs to support the identified active communication link." The routing tables noted by Alkhatib are simply disclosed as being used, when they are usable, to forward a received packet. This is quite different than identifying whether the router *needs* to support a given packet transmission let alone an "identified active communication link." The disclosure of Alkhatib is silent with respect to ascertaining "need." Instead, Alkhatib relates what the applicant has already admitted is an accurate representation of the prior art – routers are able to effect their routing functionality provided they have the requisite addressing means to support that activity. The applicant's invention teaches a way to establish part of this addressing means to support routing activity presumed to be in place in Alkhatib. In particular, the applicant's invention teaches a way to determine the need for and to help establish address prefixes in routers to provide a functioning network. In Alkhatib, as elsewhere, the routers effect their purpose without identifying whether they "need" to so act; in effect, by analogy, prior art routers use such routing tables in a reflexive manner. Such a response is divorced from any distinct consideration of whether the router actually "needs" to support a given activity.

Furthermore, claim 8 specifies identifying whether a given active communication link needs support. Alkhatib only makes disclosures regarding the handling of packets and makes no suggestion or teaching regarding whether and how a given “link” is to be supported. More precisely, the routing table usage proposed by Alkhatib occurs without regard to the underlying bearer channel; i.e., the active communication link that bears the packets in question. Alkhatib’s description relates to a method that occurs regardless of the link itself. Accordingly, it can hardly be said that Alkhatib makes any teachings that accord with the claimed notion of “automatically identifying whether the router needs to support the identified active communication link.”

Independent claim 11 presents the invention in apparatus form as a router having first means for automatically identifying at least one active communication link to provide an identified active communication link and second means for automatically identifying when the router needs to provide a new address prefix for the identified active communication link. Structure as corresponds to these means provisions has been set forth in the Summary of the Invention section provided above. The Examiner rejected claim 11 using the same arguments (indeed, the same words) as were applied against claim 1 and as were discussed above. Accordingly, all of the observations and arguments put forth by applicant with respect to claim 1 appear to be applicable here as well, but will not be repeated for the sake of brevity.

In addition, the means plus function format of claim 11 ensures that certain other limitations are also present in claim 11 that may be missing from claim 1. For example, the “means for automatically identifying when the router needs to provide a *new address prefix* for the identified active communication link” clearly includes that portion of the specification where the emphasized phrase “new address prefix” is defined in relevant part as constituting “an address prefix that has not already been allocated for use by this communication link and/or by this router.” The address manipulations of both Alkhatib and Schutte are both silent with respect to such a “new address prefix.” Consequently, and again, no combination of Alkhatib and Schutte, be that combination obvious or otherwise, will yield the applicant’s invention as claimed.

The remaining claims are ultimately dependent upon one of the independent claims set forth above. While these dependent claims in fact introduce subject matter that constitutes additional patentable content, for the sake of brevity the applicant is presently content for purposes of this appeal to rely upon the positions set forth above with respect to the independent claims.

(8) Claims Appendix

Claim 1 A method comprising:

at a router having at least two interfaces and that connects multiple communication links to one another:

identifying at least one active communication link to provide an identified active communication link;

automatically identifying whether the router needs a new address prefix for the identified active communication link.

Claim 2 The method of claim 1 wherein identifying at least one active communication link includes identifying a plurality of active communication links to provide a plurality of identified active communication links.

Claim 3 The method of claim 2 wherein automatically identifying whether the router needs a new address prefix includes identifying whether the router needs a new address prefix for each of the plurality of identified active communication links.

Claim 4 The method of claim 1 wherein automatically identifying whether the router needs a new address prefix for the identified active communication link includes automatically determining whether the router needs to advertise a new address prefix for use by link endpoints.

Claim 5 The method of claim 1 wherein automatically determining whether the router needs a new address prefix includes automatically determining when the router has not received a prefix advertisement from another router for the same active communication link.

Claim 6 The method of claim 5 wherein automatically determining when the router has not received a prefix advertisement from another router for the same active communication link includes automatically determining when the router has not received a prefix advertisement from another router for the same active communication link within a predetermined period of time.

Claim 7 The method of claim 4 wherein automatically determining whether the router needs to advertise a new address prefix for use by link endpoints includes automatically determining whether the router needs to advertise an address prefix for use by link endpoints by soliciting at least one router to advertise.

Claim 8 A method to automatically support automatic configuration of a network router having at least two interfaces and that connects multiple communication links to one another comprising:

- at the network router:

- automatically assessing each router link to identify active communication links to provide identified active communication links;

- for each identified active communication link:

- automatically identifying whether the router needs to support the identified active communication link;

- for each identified active communication link that is identified as needing support, automatically identifying whether that identified active communication link requires at least one network address prefix.

Claim 9 The method of claim 8 wherein automatically identifying whether the router needs to support the identified active communication link includes automatically monitoring the identified active communication link for prefix advertisements from another router that is supporting communications for the identified active communication link.

Claim 10 The method of claim 9 wherein automatically identifying whether the router needs to support the identified active communication link includes automatically determining that the router needs to support the identified active communication link when no other router has transmitted a prefix advertisement for the monitored identified active communication link.

Claim 11 A router comprising:

at least two interfaces such that the router connects multiple communication links to one another;

first means for automatically identifying at least one active communication link to provide an identified active communication link; and

second means for automatically identifying when the router needs to provide a new address prefix for the identified active communication link.

Claim 12 The router of claim 11 wherein the first means is further for automatically identifying a plurality of active communication links to provide a plurality of identified active communication links.

Claim 13 The router of claim 11 wherein the second means is further for automatically identifying when the router needs to provide a new address prefix for each of the plurality of identified active communication links.

Claim 14 The router of claim 11 wherein the second means is further for automatically determining when the router needs to advertise a new address prefix for use by link endpoints.

Claim 15 The router of claim 11 wherein the second means is further for automatically determining when the router needs to advertise a new address prefix for use by at least one link endpoint by soliciting at least one other router to advertise.

Claim 16 The method of claim 1 wherein an address prefix serves as a component of addresses on a communication link to allow endpoints and routers to generate new addresses for use on that communication link and wherein the router needs a new address prefix when no address prefix has been previously established for the identified active communication link.

Claim 17 The method of claim 4 wherein a router advertises a prefix on an identified active communication link by sending a message containing the prefix to all nodes present on the communication link.

Claim 18 The method of claim 8 wherein a router supports an active communication link by advertising an address prefix on that communication link and by facilitating packet-forwarding activities between the communication links via the router.


(9) Evidence Appendix

Not applicable.

(10) Related Proceeding Appendix

Not applicable.

Respectfully submitted,

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